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contacting said cell with ionizing radiation, whereby the nucleic acid is expressed to produce the radiosensitizing polypeptide and the cancer is treated.

- 2. (Twice Amended) The process of claim 1, wherein the nucleic acid encodes a TNF- α .
- 8. (Twice Amended) The process of claim 1, wherein said nucleic acid is provided by transfection by liposomes, adenovirus or HSV-1.
 - 12. (Amended) A process of sensitizing a cell to the effects of ionizing radiation comprising transfecting the cell with an adenovirus vector construct comprising a nucleic acid that encodes a cytokine, wherein said cytokine is synthesized in and secreted from said cell.
 - 13. (Amended) The process of claim 12, wherein the nucleic acid that encodes the cytokine is positioned under control of a promoter other than an adenovirus promoter.
 - 18. (Amended) A process of radioprotecting a cell from the effects of ionizing radiation comprising:
 - (a) obtaining a genetic construct comprising a nucleic acid encoding a cell radioprotecting factor operatively linked to a constitutive promoter; and
 - (b) transfecting a cell with the genetic construct; whereby said radioprotecting factor is expressed and said cell is protected from said effects.

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26. (Amended) A process of radioprotecting a cell from the effects of ionizing radiation comprising transfecting the cell with an adenovirus vector construct comprising a nucleic acid encoding a radioprotecting factor in a mammalian cell.

- 27. (Amended) The process of claim 26, wherein the nucleic acid is positioned under control of a promoter other than an adenovirus promoter.
- 29. (Amended) A pharmaceutical composition comprising a genetic construct comprising a nucleic acid that encodes a ${\tt TNF-}\alpha$ operatively linked to a constitutive promoter dispersed in a pharmacologically acceptable carrier, wherein the genetic construct is packaged within an adenovirus particle.
 - 31. (Amended) A method of expressing a radioprotecting or radiosensitizing factor in a mammal comprising administering to the mammal an effective amount of the pharmaceutical composition of claim 29.
 - (Amended) A method of assessing the response of a cell to the constitutive production of radiosensitizing or radioprotecting factors following ionizing radiation comprising:
 - (a) growing the cell in culture
 - transfecting the cell with a genetic construct comprising a nucleic acid that encodes the cell radiosensitizing factor or radioprotecting factor operatively linked to a

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constitutive promoter, whereby said nucleic acid is expressed to produce the radiosensitizing factor or radioprotecting factor;

- (c) exposing the cell to an effective dose of ionizing radiation; and
 - (d) assessing the response of the cell.

Please add new claims 37 through 42 as follows:

- --37. The pharmaceutical composition of claim 29, wherein the adenovirus particle contains a deletion of the E1 region and/or the E3 region of the adenoviral genome.
- 38. A process of inhibiting growth of a tumor in a host comprising the steps of:
- (a) injecting into the tumor a therapeutically effective amount of the pharmaceutical composition of claim 29, and
- (b) administering to the host an effective dose of ionizing radiation, whereby the growth of the tumor is inhibited by expression of the nucleic acid encoding a TNF- α and the administration of ionizing radiation.
- 39. The process of claim 38, wherein the amount of the pharmaceutical composition is between 10^8 and 10^{11} plaque forming units.
- 40. The process of claim 38, wherein the dose of ionizing radiation is between 50 and 70 Gray.